

# **Similarity: The Future of African Innovation**

**Nathan Cloos**

**Envisioning the Future of Computing Prize  
Social and Ethical Responsibilities of Computing  
Massachusetts Institute of Technology**

# Similarity: the future of African innovation

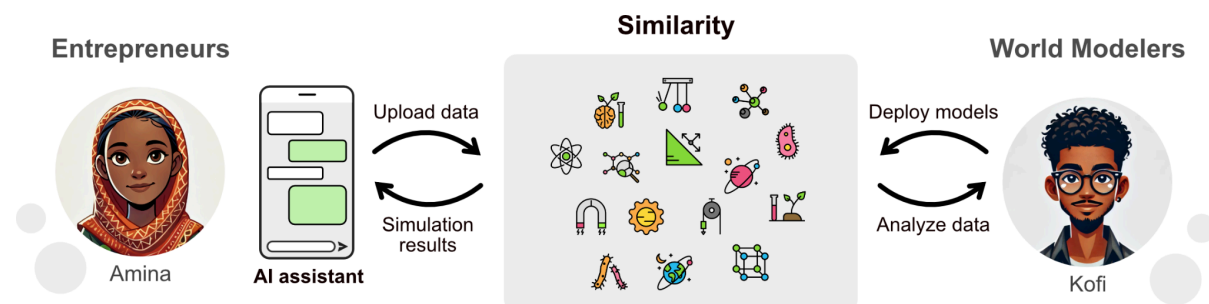
## Summary

In an era where global challenges and natural disasters push many nations to retreat into AI-generated utopias, Africa chose a different path. While other countries struggled with denial and gradual decline, Africa built something revolutionary: *Similarity*, a platform that transformed its economic and cultural landscape.

The platform connects entrepreneurs with world modelers who create sophisticated simulations of complex systems<sup>1</sup>. These modelers help businesses understand and adapt to their environment, leading to more informed decision-making and greater resilience.

Similarity represents a departure from traditional economies dominated by large, slowly adapting corporations. Instead, it empowers a network of small businesses and entrepreneurs who can rapidly adapt to changing conditions. This new system proves especially resilient in the face of outbreaks and environmental challenges, working in harmony with natural systems rather than against them.

This essay follows the stories of Amina, an entrepreneur working to escape poverty, and Kofi, a young world modeler, to illustrate how Similarity reshaped their futures—and an entire continent.



## Seeds of change

The morning sun filtered through the curtains as Amina gathered water from the well, her shoulders heavy with more than just the weight of her bucket. At twenty-eight, her weathered hands told the story of countless hours spent serving in wealthy homes near Arusha, Tanzania. Now unemployed, those same hands struggled to provide for her two young boys.

She had spent this morning like every other since losing her job as a servant: searching for work, any work, that might put food on their table. The memory of her children's faces as they divided yesterday's meager meal still haunted her. They were getting too good at pretending they weren't hungry.

"Mama Amina?" A voice called out, breaking through her thoughts. A woman in a crisp blue dress approached the well. "I'm Sarah, from Village Enterprise<sup>2</sup>. May I speak with you for a moment?"

Amina shifted the water bucket to her other hip, curiosity temporarily overriding her exhaustion. Sarah explained how Village Enterprise was transforming lives through their entrepreneurship program, offering training, mentoring, and even cash transfers to help people start their own businesses.

"We're having a meeting tomorrow in Arusha," Sarah said, her eyes kind but determined. "You should come. We're also providing access to AI assistants that can help guide you through your journey."

Amina almost declined. She'd heard promises before. But something in Sarah's voice, or perhaps just desperation, made her nod.

## **World modeler**

"Another late night on your computer?" Aisha's voice carried a mix of amusement and concern as she watched her husband, Kofi, pacing their small living room in Nairobi.

Kofi paused, his excitement momentarily contained. "Tomorrow's my first day as a world modeler at Terraform Sims. Can you believe it? After all these years of learning about AI, I'll finally be putting it to use."

Aisha set down her coffee mug. "And what exactly does a world modeler do? You've been talking about this job for weeks, but I still don't understand it."

"Honestly?" Kofi laughed, running a hand through his close-cropped hair. "I'm not entirely sure myself. But I know they use AI to create simulations that help solve real-world problems. It's like... imagine if we could test different futures before they happen, help prevent disasters before they strike."

"So you're going to predict the future?" Aisha raised an eyebrow.

"More like... help shape it." Kofi's eyes gleamed with possibility. "The company is already helping farmers across Africa. It's not just about prediction – it's about understanding complex systems well enough to improve them."

"Well, future-shaper," Aisha smiled, "you should probably get some sleep first."

The next morning, Kofi's anticipation turned to confusion as he entered Terraform Sims' bustling office. Everyone was running around like the building was on fire, faces intense with concentration.

"Thank goodness you're here!" His manager, Mr. Kwame, practically pulled him into a conference room. "We're in crisis mode. There's an unknown disease wreaking havoc on crops across East Africa. We need to model it before our competitors do!"

"I... what?" Kofi blinked, trying to process the information.

Mr. Kwame took a deep breath. "Sorry, let me explain. The world models deployed on Similarity have become so accurate that farmers rarely face unexpected crises anymore. Through their AI assistants, farmers access these simulations to make better decisions and prevent disasters before they happen."

He leaned forward, his eyes brightening. "But when an unexpected outbreak like this occurs, it means the models need updating. It reveals a gap in our society's understanding of how things work. It's an opportunity—if we identify why the existing models failed and develop a better one, farmers across the continent will benefit from it. Not only will we help prevent future disasters, but we'll also be compensated for every farmer who uses our improved model."

Through careful iteration, Similarity refined its sophisticated credit attribution system to meticulously track dataset usage, preventing exploitation and ensuring fair compensation for all contributors. World modelers earn compensation when the models they deploy on the platform are used, while entrepreneurs receive rewards for sharing their data and challenges.

## **Digital seeds**

Back in Arusha, Amina sat in her small room, staring at her borrowed phone. The Village Enterprise meeting had been overwhelming but inspiring. Her fingers hovered over the keyboard before typing a simple "Hello" to the AI assistant they'd provided.

The response was immediate and in her dialect: "Hello, Amina! I'm here to help you on your entrepreneurial journey."

Over the next few weeks, the AI guided Amina through basic business concepts, financial management, and market research. It learned about her passion for gardening and her community's needs. Connected to Similarity, the assistant modeled soil conditions, market trends, and climate patterns in Arusha.

"Based on our simulations," the AI explained, "sunflower farming could be perfect for you. The SunBright 20 seeds from AgroFarm Ltd. show particularly promising results in your area. Our models predict stable growth for the next three years, with potential revenue of \$1,200. Local buyers are willing to pay \$3 per liter for sunflower oil."

With the AI's guidance, Amina connected with two other women from her Village Enterprise group. Together, they started a small sunflower farm, using raised beds to protect against the heavy rains the AI had predicted.



## **Simulations**

At Terraform Sims, Kofi sat at his workstation, logging into Similarity to search for crop data across East Africa. His company had a budget for accessing data on the platform, where users like farmers could upload observations and receive compensation for their contributions. He focused on a dataset from a small-scale farmer named Amina who had been conducting systematic experiments a few months ago, documenting the disease's progression with surprising precision.

Using Genie 13, his favorite 3D world generation model<sup>3</sup>, Kofi created a virtual environment based on the dataset's descriptions. He further prompted the model with time series data, allowing him to reproduce exactly what happened as reported. The data revealed a stark reality: at month thirteen, 95% of the crops had died.

The farmer's report also indicated which existing models had failed to predict this outcome. Kofi loved how Similarity made it so easy to access any datasets or models with just one line of code. He could easily run the failed model on his company's supercomputer. The disparity was striking: while the real crops had failed at month thirteen, the simulation showed them thriving well past that point.

Working with Cursor and DeepSeek T21<sup>4</sup>, he analyzed the complex source code. The model incorporated multiple components: soil dynamics, crop growth, atmospheric conditions, and molecular chemistry. He worked with senior world modelers specialized in chemistry, biology, and plant pathology, and systematically compared simulations of different diseases with the specific seed variant the farmer had used, hoping to identify if the pathogen was already listed in Similarity's database.

They identified four known pathogens that could have caused the death of the crops under the reported conditions. The genetics team immediately began work on resistant seed variants, running thousands of simulations through the state of the art genetics models available on Similarity. What once would have taken years in a traditional lab now unfolded in weeks of accelerated virtual testing.

## **Opportunity**

A year into her successful sunflower business, Amina faced disaster. "What am I going to do?" she asked her AI assistant, trembling. "So many of my crops died. I've no idea what happened."

"It's okay," the AI responded with its characteristic calm. "This could be an opportunity. If we document this carefully, your data could help others facing similar issues. Let me guide you through some specific measurements and observations."

Amina followed the guidance, purchasing the recommended devices and taking initial measurements. She uploaded these to Similarity along with a detailed report of her losses.

After a couple of days, more and more researchers began analyzing her report, and her AI assistant guided her through additional experiments to upload more data to Similarity.

To her surprise, she was getting paid for all of this. "I don't understand," she told the AI. "Why am I receiving money for uploading data about my failed crops?"

Her AI assistant explained how Similarity worked: "You see, people are very interested in your findings and want to access your data. Similarity has an economic model where researchers need to pay to get access to data. I'm connecting you to this system and helping transfer the revenues to your bank account."

With the unexpected income, Amina was able to buy more sophisticated measurement devices. What she had feared would be catastrophic for her revenue had actually opened up a new income stream. Her AI assistant explained that this was the power of Similarity – it connected individuals facing challenges with world modelers who could analyze their data and create solutions. The platform incentivized businesses to share rather than hoard their data, which benefited everyone and advanced world modeling discoveries, making all AI assistants even better.

Later, Amina learned in the news that what had happened to her crops was just the beginning – similar crop failures were being reported across East Africa, marking one of the biggest agricultural outbreaks the continent had known. Her early documentation had helped researchers get ahead of the crisis.

## **African innovation**

Weeks of relentless work paid off when Kofi's team successfully modeled the new seed variant. "You did impressive work!" his manager Mr. Kwame exclaimed. "This will be huge for the company. Everyone's going to use our model!" The night they deployed the model to Similarity, his colleagues dragged him to a local café to celebrate.

"Impressive work," a voice said as Kofi waited for his drink. An elderly man sat nearby, his eyes sharp despite his age. "The world you know today is very different from what it used to be."

"How do you know about our work?" Kofi asked, intrigued.

"I'm Dr. Maina," the old man said. "One of the last traditional plant pathologists. We spent years in laboratories trying to understand diseases like this. Before Similarity, we watched small businesses struggle against corporate giants. But now..." He gestured to Kofi's phone, where notifications about the model's adoption were already appearing. "World modelers can do that in weeks what once took years, which enables small farmers and their AI assistants to adapt faster than any corporation."

Kofi settled into the seat next to him, his curiosity piqued. "What's the difference between scientists then and world modelers now?"

"We scientists studied the world to understand it. You world modelers..." Dr. Maina gestured to Kofi's phone, where Similarity's interface glowed. "You study it to shape it. A combination of scientist and engineer that we never imagined possible."

As the evening deepened, Dr. Maina revealed the critical choice made decades ago. "There was a moment when humanity stood at a crossroads. The wealthy nations were racing for AI supremacy, creating increasingly immersive virtual worlds – metaverses – so compelling that reality began to lose its appeal. At the time, few understood the importance of working in harmony with natural systems."

"But we saw another path," he continued. "We couldn't stop it in our own countries – the momentum was too strong, but we could offer an alternative. In Africa, we built a system that mirrors natural systems – resilient, collaborative, adaptive. We created economic incentives that reward solving real problems rather than escaping them. An engine for innovation where people work together, across distances and disciplines, to solve the problems that matter most. A network where small businesses like Amina's can access world-class modeling tools and adapt quickly to changes."

"And the metaverses?" Kofi asked. "The technology still exists."

Dr. Maina stood, his movement slow but deliberate. "Of course. The same tools that power Similarity could trap people in virtual worlds. But we proved there's a better way – technology works best when it empowers people to work with natural systems, not against them. Your generation of world modelers holds more power than you realize. You're not just solving individual problems – you're helping guide humanity's trajectory. Remember that the next time you're building a model."

## Acknowledgments

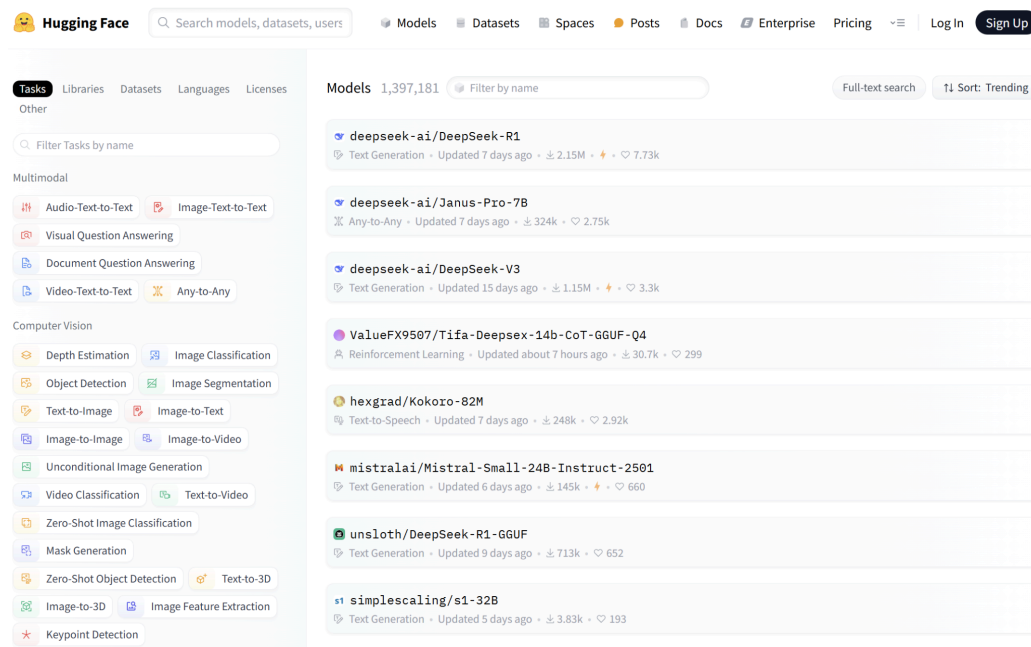
I am truly grateful to Josh Levy for organizing an interview with Village Enterprise, which served as the inspiration for Amina's story. I also extend my appreciation to Mohamed Abdelmeguid for his contributions. A special thank you to Chris Cueva, Hansen Lillemark, and Mel Gonzalez, whose thoughtful feedback and reflections added considerable depth to this essay.

ChatGPT and Claude were used to improve the grammar.

## Notes

[1] Similarity is a platform that combines elements of developer hubs like GitHub or HuggingFace, with marketplace and social media dynamics. The closest technology to Similarity existing in 2025 is HuggingFace. HuggingFace is a hub for open source AI where

people can upload models or datasets. It also provides a standardized interface to easily access the models with a few lines of code. Similarity expands on this concept, scaling it beyond AI into all fields of science, creating a platform for integrative world models. Similarity connects individuals with valuable datasets to those who need them to build new models.



### [Models - Hugging Face](#)

[2] Village Enterprise (<https://villageenterprise.org/>) is non-profit organization focused on helping impoverished individuals in rural Africa, particularly women and youth, start sustainable small businesses to break the cycle of extreme poverty by providing them with necessary resources, training, and mentorship to launch and manage their own micro-enterprises; essentially aiming to empower them to generate income and improve their livelihoods through entrepreneurship.

[3] "Genie 13" is an extrapolated version of DeepMind's Genie 2 model. Genie 2 is a generative AI model capable of transforming static images into interactive, dynamic worlds. Genie 13 imagines an advanced iteration, where AI-generated environments become detailed simulations used for scientific modeling.



<https://deepmind.google/discover/blog/genie-2-a-large-scale-foundation-world-model/>

Additionally, a screenshot from the game Manor Lords (<https://manorlords.com/>) serves as a visual reference for how AI-generated world models could look in the future.



<https://www.eurogamer.net/manor-lords-tips-how-to-get-started-and-what-to-do-first-9431>

[4] Future iterations of Cursor (<https://www.cursor.com/>) and DeepSeek (<https://www.deepseek.com/>).